

ABSTRACT

A novel transparent film is disclosed. $Re(\lambda)$ and $Rth(\lambda)$ of the film defined by the following formulae (I) and (II) satisfy the following formulae (III) and (IV):

$$(I) \quad Re(\lambda) = (n_x - n_y) \times d,$$

$$(II) \quad Rth(\lambda) = \{ (n_x + n_y)/2 - n_z \} \times d,$$

$$(III) \quad 0 \leq |Re(630)| \leq 50,$$

$$(IV) \quad Rth(400) \times Rth(700) \leq 0, \text{ and } 0 \leq |Rth(700) - Rth(400)| \leq 150,$$

wherein $Re(\lambda)$ means an in-plane retardation value at a wavelength λ nm (unit: nm); $Rth(\lambda)$ means a thickness-direction retardation value at a wavelength λ nm (unit: nm); n_x means a refractive index in the in-plane slow-axis direction; n_y means a refractive index in the in-plane fast-axis direction; n_z means a refractive index in the film thickness direction; and d means a thickness of the film.